

## Vacuum-sealed food: What are the food safety concerns?

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Safely freeze and thaw foods with vacuum packaging.



Vacuum packaging is a method of removing oxygen from packaged food. Another name for it is reduced oxygen packaging (or ROP). Using a vacuum suction, the air is removed from the bag, thus removing oxygen, and the package is then sealed off so air cannot get into the package. You can find food with ROP packaging commercially, and there are also methods to package food at home this way as well.

Benefits to packaging food using the ROP method include:

- Reduced dehydration or freezer burn.
- Extended shelf life of food. With the removal of oxygen, food keeps its color, texture and flavor longer by reducing the risk of bacteria from surviving that can spoil food.
- Reduced food waste by extending the shelf life of the product.
- The ability to portion food for personal use.
- Less transfer of odors to and from the packaging.
- The ability to package refrigerated, frozen and dried foods.

Items like pasties, bulk meats or portioned meats like chicken breasts, all of which require refrigeration or freezing, seal well for home packaging. The sealer can also be used for non-perishable foods that do not require refrigeration, such as dried beans or coffee beans.

### **What are the risks with vacuum packaging?**

It is important to know that along with advantages, there are risks with this packaging method.

- Vacuum packaging does NOT replace food preservation, it is merely a different packaging method. In other words, refrigerated foods still require refrigeration, or freezing. It is also NOT a replacement for home canning.
- Although bacteria that cause spoilage may not have access to the food to turn the food to slime or mold or a smelly blob, other pathogenic bacteria can survive. Clostridium botulinum (botulinum) is a very dangerous pathogen that can survive without oxygen.

- A clean, sanitary environment is critical to keep food safe, so take precautions when using this method at home.
- Food will still spoil; it does not prevent spoilage.
- There is a heightened danger with ROP fish. Fish must be removed from the package before thawing.
- Vacuum sealer manufacturers recommend that you do not package raw onions, fresh mushrooms or fresh garlic due to botulinum concerns.
- Some foods do not seal well, such as bakery foods and liquid products.

### **Why is it so important to remove ROP from the packaging before thawing?**

Botulinum is an anaerobic bacterium, which means it can survive without oxygen and produce a deadly toxin. This toxin leads to an illness called botulism and is generally life threatening. Some *C. botulinum* strains do not grow well in the refrigerator, and keeping the package sealed in cold conditions can prevent its growth. But there are different strains of *C. botulinum*, and some *can* grow in cold temperatures - fish contain these strains. This means that even though fish is kept cold in the refrigerator, the *C. botulinum* can survive & produce a toxin if it is kept in the sealed ROP package.

To reduce your risk of botulism from fish thawed in ROP packaging, remove the fish from packaging before thawing. Exposing the fish to oxygen will prevent the toxin from forming. Fish frozen in ROP packaging has these instructions on the product label. Michigan State University Extension recommends following these thawing recommendations to reduce chances of foodborne illness. For more information on food safety, visit MSU Extension's Safe Food & Water website.

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